

## Temporary Aquifer Protection Permit #P-105837 Dutch Joe Ranch Pilot Project Place ID 19282, LTF 42812 July 2007

The Arizona Department of Environmental Quality (ADEQ) proposes to issue an aquifer protection permit for the subject facility that covers the life of the facility, including operational, closure, and post-closure periods unless suspended or revoked pursuant to A.A.C. R18-9-A213. This document gives pertinent information concerning the issuance of the permit. The requirements contained in this permit will allow the permittee to comply with the two key requirements of the Aquifer Protection Program:

- 1) meet Aquifer Water Quality Standards at the Point of Compliance; and
- 2) demonstrate Best Available Demonstrated Control Technology (BADCT).

The purpose of BADCT is to employ engineering controls, processes, operating methods or other alternatives, including site-specific characteristics (i.e., local subsurface geology) to reduce discharge of pollutants to the greatest degree achievable before they reach the aquifer, or to keep pollutants from reaching the aquifer.

### **I. FACILITY INFORMATION**

#### **Name and Location**

##### **Name of Permittee:**

Richard E. Bunger, CEO and  
Managing Member of R.E.B. Properties, L.L.C

##### **Mailing Address:**

10575 N. 114th St., Suite 107  
Scottsdale, AZ 85259

##### **Facility Name and Location:**

Dutch Joe Ranch Pilot Project  
Approximately 10 miles north of Woods Canyon Lake  
Coconino County

#### **Regulatory Status**

This Temporary APP is for the testing of two new treatment systems. The APP application was received by ADEQ on December 21, 2006. This Temporary APP is valid for one year from the date of permit issuance.

#### **Facility Description**

This permit authorizes a pilot project for the temporary operation of two (2) wastewater treatment systems for Dutch Joe Ranch, located approximately ten miles north of Woods Canyon Lake, in Coconino County, Arizona. These systems are being tested simultaneously to determine if they are capable of producing effluent which meets the Aquifer Water Quality Standards. This project qualifies for a Temporary Individual Aquifer Protection Permit (APP) under A.A.C. R18-9-A210(A)(1). The pilot systems are modular components that can be expanded in the future to a larger wastewater treatment facility under an individual APP.

One component of the pilot project consists of three (3) 4,000-gallon solids settling tanks, a 4,500 gallon per day (gpd) Septitech M3000 textile filter system with UV disinfection, an effluent storage tank, and an effluent pump station. This system services the facilities near the ranch headquarters, and shall be referred to as the Shady Hollow Wastewater Treatment Facility (SHWWTF) throughout this permit. Disposal shall be by reuse (for restricted access uses), drip emitter sub-surface disposal (if total nitrogen levels are less than 10 mg/l), or hauling to the Winslow WWTP if the effluent quality or weather does not allow for reuse or sub-surface disposal.

The other component of the pilot project consists of three (3) 4,000-gallon solids settling tanks, a 5,000 gpd Orenco AX100 textile filter treatment system with UV disinfection, an effluent storage tank, and an effluent pump station. This system services the facilities near the barn and ranch center, and shall be referred to as the Roundup Wastewater Treatment Facility (RWWTF) throughout this permit. Disposal shall be by reuse (for restricted access uses), drip emitter sub-surface disposal (if total nitrogen levels are less than 10 mg/l), or hauling to the Winslow WWTP if the effluent quality or weather does not allow for reuse or sub-surface disposal.

In the event one of the pilot treatment systems meets the discharge limits and the other does not, the permittee also has the option of hauling the wastewater to the better performing system within permitted flow capacity.

For both systems, any settled solids shall be removed off-site to an approved landfill.

This temporary permit expires one year after date of signature (unless renewed under A.A.C. R18-9-A210(E)).

In addition to the APP conditions pertaining to treatment and disposal of sewage sludge, the permittee must also comply with the requirements for sewage sludge disposal in 40 Code of Federal Regulations (CFR) Part 503 and 18 A.A.C. 9, Article 10.

## **II. BEST AVAILABLE DEMONSTRATED CONTROL TECHNOLOGY (BADCT)**

The wastewater treatment facilities (WWTFs) are designed, constructed and operated to meet the requirements for general permit approval under A.A.C. R18-9-A312 for an on-site wastewater treatment and disposal system under a Type 4 General Aquifer Protection Permit and meet the requirements of A.A.C. R18-9-E323. The WWTFs provide UV light disinfection, and reuse at consumptive-use rates.

## **III. MONITORING AND REPORTING REQUIREMENTS**

Depth to groundwater in the vicinity of the facility is approximately 960 feet below land surface and groundwater generally flows north. The nearest points of use in the aquifer are on-site production well #2 (owned by the permittee) located approximately 920 feet north of the SHWWTF, and on-site production well #3 (also owned by the permittee) located approximately 600 feet south of the RWWTf.

To ensure that site operations do not violate Aquifer Water Quality Standards at the points of compliance, the permit requires the permittee to collect representative samples of the effluent from the points of discharge from the UV disinfection units. The permittee is required to monitor the effluent as follows: daily for flow rate; monthly for total nitrogen, nitrate-nitrite as N, and total Kjeldahl nitrogen (TKN); and annually for metals and volatile organic compounds (VOCs). Initial samples for metals and VOCs shall be analyzed within the first quarter of operation following signature of the permit. If the permit is renewed as per A.A.C. R18-9-A210(E), samples for metals and VOCs shall be analyzed in the first quarter of the

renewal period. Discharge Limits (DLs) for discharge monitoring were generally set at relevant numeric Aquifer Water Quality Standards (AWQSSs) to be protective of groundwater. In general, Alert Levels (ALs) were established at eighty percent of the DLs, except for flow, which was set at 95% of the DL.

Routine discharge monitoring for E. coli has not been established due to the following considerations: extensive depth-to-groundwater (over 900 feet below ground surface); the low flow rates of the systems; compliance with the general permit requirements (A.A.C. R18-9-E.312); and the requirement to monitor the reclaimed water on a daily basis for E. coli under the reclaimed water monitoring table (Table IC).

To ensure that site operations do not violate the Reclaimed Water Quality Standards for the beneficial use of Class B reclaimed water, the permittee is required to collect representative samples from the same sampling point specified by the permit for routine discharge monitoring, and monitor the reclaimed water daily for E. coli to ensure that Class B standards are met per A.A.C. R18-11-306. A second monitoring table (Table IC) is included in the permit for the additional discharge monitoring that is required for reuse.

### **Points of Compliance (POCs)**

The POCs for these facilities are located at the north boundaries of the pollutant management areas (PMAs) at latitude 34°28'51" N, longitude 110°57'12" W for the SHWWTF (POC #1), and at latitude 34°29'34" N, longitude 110°57'36" W for the RWWTf (POC #2). The permit does not require installation of a monitoring well at either of the POCs for the current monitoring program.

## **IV. STORM WATER/SURFACE WATER CONSIDERATIONS**

The facilities are not located within a 100-year floodplain.

## **V. COMPLIANCE SCHEDULE**

According to Section 3.0 in the permit, within 90 days of completion of construction of the treatment facilities, the permittee shall submit a signed, dated, and sealed Engineer's Certificate of Completion in a format approved by the Department that confirms that the facilities have been constructed according to the Department-approved design report or plans and specifications, as applicable.

## **VI. OTHER REQUIREMENTS FOR ISSUING THIS PERMIT**

### **Technical Capability**

R.E.B. Properties has demonstrated the technical competence necessary to carry out the terms and conditions of the permit in accordance with A.R.S. § 49-243(N) and A.A.C. R18-9-A202(B). The design report was prepared, stamped, dated, and signed (sealed) by Mills Engineering, L.L.C., employing professional engineers registered in the state of Arizona. The permittee is expected to maintain technical capability throughout the life of the facility.

### **Financial Capability**

R.E.B. Properties has demonstrated the financial responsibility necessary to carry out the terms and conditions of the permit in accordance with A.R.S. § 49-243(N) and A.A.C. R18-9-A203. The permittee is expected to maintain financial capability throughout the life of the facility.

### **Zoning Requirements**

A letter (located in the project file) from the applicable zoning authority indicates that the facilities are exempt from current zoning ordinances.

## **VII. ADMINISTRATIVE INFORMATION**

### **Public Notice (A.A.C. R18-9-108(A))**

The public notice is the vehicle for informing all interested parties and members of the general public of the contents of a temporary Aquifer Protection Permit (APP) or other significant action with respect to a permit or application. The basic intent of this requirement is to ensure that all interested parties have an opportunity to comment on significant actions of the permitting agency with respect to a temporary APP or other significant action with respect to a permit or application. This permit will be public noticed in a local newspaper within 30 days of permit issuance.

### **Public Comment Period (A.A.C. R18-9-109(A))**

The aquifer protection program rules require that permits be public noticed in a newspaper of general circulation within the area affected by the facility or activity and provide a minimum of 30 calendar days for interested parties to respond in writing to ADEQ. After the closing of the public comment period, ADEQ is required to respond to all significant comments.

### **Public Hearing (A.A.C. R18-9-109(B))**

A public hearing may be requested in writing by any interested party. The request should state the nature of the issues proposed to be raised during the hearing. A public hearing will be held if the Director determines there is a significant amount of interest expressed during the 30-day public comment period, or if significant new issues arise that were not considered during the permitting process.

## **VIII. ADDITIONAL INFORMATION**

Additional information relating to this permit may be obtained from:

Arizona Department of Environmental Quality  
Water Quality Division - APP and Reuse Unit  
Attn: Marcy Mullins  
1110 W. Washington St., Mail Code 5415B-3  
Phoenix, AZ 85007  
Phone: (602) 771-4464 or  
toll-free (800) 234-5677 Ext: 771-4464